1861MNRAS..22...38L

a good deal than the part of the Sun at the opposite point of the diameter of the planet. The blackness of the planet appeared greater a good deal than the usual nuclei of the spots, and its termination persuaded me that the nuclei are really badly terminated, and that there is a real diffusion of matter in their borders. In the intervals left between the clouds, during the passage, I measured a great many distances and positions of the planet from the edge of the Sun's disk; and I made, also, 9 double measures of the diameter of the planet. The result of these is $=9''\cdot077$, with probable error $=0''\cdot189$. It is remarkable that the duration of the passage gives for this diameter $9''\cdot165$. This value is different from that given in the tables. A year ago I obtained from some measures a diameter even smaller—that is, $8''\cdot91$. I propose to take a few more measures of this element; but it is rather difficult, on account of the termination of *Mercury's* disk, which is always very bad, and seems to be very faint at the edges.

A new discussion of my magnetical observations compared with a series of electrical atmospherical observations have led me to admit a real connexion between this electricity, and the variations of at least the horizontal intensity. In many things, I think, M. Lamont is right; and what he has suggested on this account I believe him to have demonstrated and seen directly.

The Transit of Mercury, November 11, 1861, *observed at Malta.* By W. Lassell, Esq.

At No. 9, Piazzi Stierna, Via Torre, Malta, approximate longitude $58^m\ 2^s$ east of Greenwich, latitude 35° 54′ 46″ north, 1861, Nov. 11th, I observed the emersion, or egress, and part of the transit of *Mercury* over the Sun. The best telescope I had at hand was a very sharply-defining Gregorian of 4·7 inches aperture; power used, 78. I first pointed the telescope at about 19·50 Stierna mean time. The planet, being considerably advanced on the disk, appeared perfectly well defined, round, and black. I watched the phenomenon from time to time until about 22^h; after which I observed it uninterruptedly until its disappearance. I had, however, no means suitable for making any accurate measures; but I was filled with admiration, throughout, of the exquisite beauty of the vision. The limb of the Sun and the disk of the planet were far more sharp and beautiful than I have ever seen them with equal power, and within 1½ to 3 hours of the horizon.

Downloaded from http://mnras.oxfordjournals.org/ at Ernst Mayr Library of the Museum Comp Zoology, Harvard University on July 17, 2015

© Royal Astronomical Society • Provided by the NASA Astrophysics Data System

1861MNRAS..22...38L

Notwithstanding that the heat of the Sun was so great as to make a shield necessary for the exposed part of my person (though I was generally well protected by a verandah), yet the image was, with occasional slight disturbances, as sharp as can be conceived, and afforded a striking contrast to all I have seen before.

I scrutinised the planet well throughout its transit, but could not be sure of any peculiarity. I repeatedly *fancied* it a little elliptical, but I do not believe in the reality of the appearance.

The times are given in Stierna mean time; they were noted with a duplex watch, compared with a standard mean time clock, accurately corrected and rated by sextant observations.

At $22^{h}\ 15^{m}\ 57^{s}\cdot 1$ the planet was estimated to be just its own diameter from the Sun's limb.

At $22^{h}\ 16^{m}\ 13^{s}\cdot 5$ it was clearly within one diameter.

At $22^{h}\ 18^{m}\ 5^{s}\cdot 9$, first contact. Shortly after, the planet seemed momentarily drawn out towards the limb, pear-like.

At $22^{h}\ 18^{m}\ 53^{s}\cdot 5$ the Sun's limb bisected the planet. No distortion whatever. Shortly afterwards I had a momentary impression of the lengthening out of the diameter which was a tangent to the Sun's limb, or which had just passed it.

At $22^{h}\ 20^{m}\ 21^{s}\cdot 5$, last contact, *i.e.* the first moment that I was sure that the planet was no more to be seen.

It has rarely been my lot to observe an astronomical phenomenon with circumstances so favourable and pleasant.

I have much pleasure in stating that I have erected the 4-foot equatoreal telescope on a very excellent site, across the Quarantine Harbour from Valetta, and nearly north of it, within a short distance of Fort Tigné.

A boundary wall, inclosing an area twenty yards square, in the centre of which the telescope stands, and a sufficiently capacious laboratory adjacent, are on the point of completion. The observing tower is in process of erection, and I hope very shortly to commence operations.

Observations of the Transit of Mercury, November 11, 1861, *made at the Observatory, Durham.* By Prof. T. Chevallier.

The weather was very favourable, at Durham, for observing the transit of *Mercury* on the 11th of November. At sunrise the eastern part of the sky was almost cloudless, and continued so till the emersion of the planet. The Sun's limb, however, in consequence of his low altitude and the state of the atmosphere, was very undulating.

© Royal Astronomical Society • Provided by the NASA Astrophysics Data System